Integrated Waste Treatment Facility Designed to Treat Liquid Radioactive Waste at DOE's Idaho Site

The Integrated Waste Treatment Unit is a newly constructed facility that is designed to treat 900,000 gallons of radioactive liquid waste stored in underground tanks at a former Cold War spent nuclear fuel reprocessing facility located at DOE's Idaho Site.

An exterior view of the Integrated Waste Treatment Unit

IWTU is a 53,000-square foot facility that will use a steam-reforming technology to heat up the liquid waste, essentially drying it, consolidating the solid, granular material, packaging it in stainless steel canisters, and storing the containers in above-ground concrete vaults at the site. Ultimately, the treated material will be transported to a national geologic repository for permanent disposal.

Any facility emissions generated during the treatment campaign will be filtered through high-efficiency particulate air (HEPA) filters to "scrub" the discharges to ensure compliance with state and federal air quality requirements.

The liquid waste, called "sodium-bearing waste" due to its high sodium content, was generated during the later phases of spent nuclear fuel reprocessing. The INTEC facility reprocessed and recovered more than $1 billion worth of uranium from the 1950s until 1992, returning the uranium to the U.S. stockpile to be used again in research and government production reactors.

An interior carbon feed skid located within the Integrated Waste Treatment Unit

The IWTU facility began start-up operations in April of 2012, but a pressure event caused a temporary shutdown to allow for re-evaluation and limited re-design of the facility. A phased start-up is now expected to be completed sometime in the spring of 2013, with completion of treatment expected in 2014.

Once the three underground storage tanks containing the waste have been emptied, they – like 8 other previously closed waste tanks – will be thoroughly washed, drained and filled with a concrete grout mixture. A fourth tank that was never used will also be grouted. The entire tank farm will be eventually capped.

For more information visit the Idaho Cleanup Project on the Web at https://idahocleanupproject.com